

Claims

- [1] An LCD apparatus comprising:
an LCD panel assembly having a plurality of pixels controlling an arrangement of liquid crystal so as to display a color image;
a light supplying unit having a light source supplying a red light during a time corresponding to one-third of a frame, a green light during the time and a blue light during the time; and
a light reflective-transmissive unit disposed between the light supplying unit and the LCD panel assembly so as to transmit the red light, the green light and the blue light and to reflect a light externally provided to the LCD panel assembly in order to improve luminance of the color image.
- [2] The LCD apparatus of claim 1, wherein the pixels comprise a transparent electrode transmitting the red light, the green light and the blue light.
- [3] The LCD apparatus of claim 1, wherein the light source comprises a red light supplying unit emitting the red light, a green light supplying unit emitting the green light and a blue light supplying unit emitting the blue light.
- [4] The LCD apparatus of claim 3, wherein each of the red light supplying unit, the green light supplying unit and the blue light supplying unit comprises a cold cathode fluorescent lamp.
- [5] The LCD apparatus of claim 3, wherein each of the red light supplying unit, the green light supplying unit and the blue light supplying unit comprises a light emitting diode.
- [6] The LCD apparatus of claim 3, wherein the red light supplying unit, the green light supplying unit and the blue light supplying unit are alternately disposed.
- [7] The LCD apparatus of claim 1, wherein the light reflective-transmissive unit comprises a light reflective-transmissive film including a plurality of first layers and a plurality of second layers, the first and second layers have different refractive indexes from each other, and the first and second layers are alternately stacked.
- [8] The LCD apparatus of claim 7, wherein the light reflective-transmissive unit is disposed at a position facing the light supplying unit of the LCD panel assembly.
- [9] The LCD apparatus of claim 1, wherein the pixels comprise;
a transparent electrode transmitting the red light, the green light and the blue light; and

a reflective electrode disposed on the transparent electrode, the reflective electrode having a contact hole through which a portion of the transparent electrode is exposed.

[10] The LCD apparatus of claim 1, further comprising a light guide plate including a light-exiting surface facing the light supplying unit, a light reflecting surface facing the light-exiting surface and a side surface connecting the light reflecting surface to the light-exiting surface, and wherein the light source is disposed on the side surface of the light guide plate.

[11] An LCD apparatus comprising:
a light supplying unit including a light guide plate and a light source, the light guide plate having a first light-exiting surface, a second light-exiting surface facing the first light-exiting surface and a side surface connecting the first and second light-exiting surfaces, the light source supplying a red light during a time corresponding to one-third of a frame, a green light during the time and a blue light during the time;
a first liquid crystal display part disposed at a position facing the first light-exiting surface so as to receive the red light, the green light and the blue light from the first light-exiting surface and to display a first image;
a second liquid crystal display part disposed at a position facing the second light-exiting surface so as to receive the red light, the green light and the blue light exiting from the second light-exiting surface and to display a second image; and
a light reflective-transmissive film disposed between the first liquid crystal display part and the first light-exiting surface so as to transmit the red light, the green light and the blue light provided to the first liquid crystal display part and to reflect an external light provided from an exterior to the first liquid crystal display part.

[12] The LCD apparatus of claim 11, wherein the first liquid crystal display part comprises a reflective-transmissive type LCD panel displaying an image using the red light, the green light, the blue light and the external light.

[13] The LCD apparatus of claim 11, wherein the first liquid crystal display part comprises a transmissive type LCD panel displaying an image using the red light, the green light, the blue light and the external light.

[14] The LCD apparatus of claim 11, wherein the second liquid crystal display part comprises a reflective-transmissive type LCD panel displaying an image using the red light, the green light, the blue light and the external light.

- [15] The LCD apparatus of claim 11, wherein the second liquid crystal display part comprises a transmissive type LCD panel displaying an image using the red light, the green light, the blue light and the external light.